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National University of Computer & Emerging Sciences

FAST-Karachi Campus

CS201- Data Structures (Fall 2018)

Grand Quiz # 4

Dated: December 06, 2018 Marks: 40

Time: 25 Min.

Std No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Checker No. \_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Q1** | A | B | C | D | **Q11** | A | B | C | D |
| **Q2** | A | B | C | D | **Q12** | A | B | C | D |
| **Q3** | A | B | C | D | **Q13** | A | B | C | D |
| **Q4** | A | B | C | D | **Q14** | A | B | C | D |
| **Q5** | A | B | C | D | **Q15** | A | B | C | D |
| **Q6** | A | B | C | D | **Q16** | A | B | C | D |
| **Q7** | A | B | C | D | **Q17** | A | B | C | D |
| **Q8** | A | B | C | D | **Q18** | A | B | C | D |
| **Q9** | A | B | C | D | **Q19** | A | B | C | D |
| **Q10** | A | B | C | D | **Q20** | A | B | C | D |

Q1. How many times a traversal on tree, visit each node of a tree?

1. 1
2. 2
3. N
4. 0

Q2. In a BST how many nodes have null parent pointer?

1. 1
2. 2
3. N
4. 0

Q3. How many distinct binary trees can be formed from 4 nodes?

1. 4
2. 14
3. 9
4. 16

Q4. What is the largest depth of a BST with N Nodes?

1. Log N
2. 2\*N
3. N-1
4. N

Q5. How many pairs of, binary trees can be formed from 4 nodes, if we count mirror and original trees possible, as one pair.?

1. 3
2. 14
3. 7
4. 9

Q6. What is the size of an AVL tree with N nodes?

1. N-1
2. N
3. N2
4. Log N

Q7. Which is not an issue for DSW Algorithm?

1. Extra Array
2. Rotation
3. Update Time
4. Modification Time

Q8. A traversal that performed, visit to all decedents nodes of a given node before the accessing any same level node is termed as:

1. Depth-First Traversal
2. Breadth-First Traversal
3. Diameter Traversal
4. Height-Traversal

Q9. In Hashing, which is not a collision resolution technique?

1. Linear probe
2. Separate chaining
3. Merging
4. Double hashing

Q10. What can be a drawback for using hashing?

1. Simplistic Hash-function
2. Collision resolution strategies
3. Space
4. Non-unique keys

Q11. What is the space complexity of a Binary Search?

1. O(1)
2. O(n)
3. O( log n)
4. O( n log n)

Q12. Interpolation search works better than Binary Search, when

1. Data is sorted
2. Uniformly distributed
3. Both A and B
4. Neither of A,B and C

Q13. Time complexity of Binary search is

1. O(n)
2. O(log n)
3. O(n log n)
4. O(n2 )

Q14. Which of the following data structure is non-linear type?

1. Array
2. LinkedList
3. Trees
4. Pair

Q15. Time complexity of Binary Search Tree for searching a node is

1. O(n)
2. O (log n)
3. O(h)
4. O (n log n)

Q16. A binary search tree whose left subtree and right subtree differ in height by at most 1 unit is called

1. AVL Tree
2. Skew Tree
3. Unbalance Tree
4. Binary Tree

Q17. In AVL Tree Right-Rotation is need when one of the condition is true for the tree

1. Left Skew Tree
2. Left-Right Skew Tree
3. Right Skew
4. Balance

Q18. In AVL Tree the height of the tree is related to the height of a balance tree with same data

1. Same height
2. Less height
3. More height
4. No-relation

Q19. The time complexity of heap sort is?

1. O(1)
2. O(n)
3. O( log n)
4. O( n log n)

Q20. What is true about jump search?

1. Data should be sorted
2. It searches fewer elements than linear search.
3. It searches fewer elements than binary search.
4. A and B